

Exercise sheet 3**Correction to exercise 4a**

As written, Ex. 4a of sheet 3 is false (thanks to Sil Linskens and Tim Santens for a counterexample!). However, it is correct with stronger hypotheses. The corrected version of it is as follows:

Exercise 4(a). Let $A \rightarrow X$ be a cofibration of spaces and let $f, g: X \rightarrow Y$ be continuous maps such that $f \simeq g$ and $f|_A = g|_A$.

Assume that Y is simply-connected, A is contractible and that the inclusion $\{a\} \hookrightarrow A$ is a closed cofibration for some $a \in A$.

- (a)₁ Show that any map $A \times S^1 \rightarrow Y$ extends to $A \times D^2 \rightarrow Y$.
- (a)₂ Using the homotopy extension property of $A \times [0, 1] \rightarrow X \times [0, 1]$, show that f and g are homotopic relative to A .